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FILE NO: 63024 000002

January 31, 2007

Via Facsimile

Examiner Jeffrey S. Parkin, Ph.D.
United States Patent and Trademark Office
Alexandria, VA 22314

Re: Proposed Claim Amendments for Application Serial Number 10/667,966

Dear Examiner Parkin:

Thank you again for taking the time to allow us to interview with you on January 12, 2007, on such short notice. A summary of this interview will be included with our formal response. At the conclusion of the interview, it was our understanding that we were invited to submit proposed claim amendments for your consideration prior to filing of the formal response. Further to this understanding, please find attached a draft claim set with proposed amendments for discussion purposes only. I am available telephonically to discuss these proposed claim amendments at your convenience. Thank you again for your consideration.

Sincerely,

Robert C. Lampe III
RCL

Enclosure

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MESSAGE

IF PROBLEM WITH TRANSMISSION, PLEASE CONTACT OPERATOR AT 202 • 955 • 1500.

OPERATOR

DATE:	January 31, 2007
TIME:	
CLIENT/MATTER NAME:	Frontier Biotechnologies, Co., Ltd.
CLIENT/MATTER NO.:	63024.000002

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AMENDMENTS

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) An isolated FB005, FB006 or FB066 peptide comprising the sequence of SEQ ID NO:1, SEQ ID NO:2 or SEQ ID NO:[[3]] 7, respectively.

2. (Canceled)

3. (Canceled)

4. (Currently Amended) An isolated, modified peptide comprising SEQ ID NO:5 modified by ~~selected from the group consisting of:~~

~~(a) SEQ ID NO:1;~~

~~(b) SEQ ID NO:2;~~

~~(c) SEQ ID NO:3; and~~

~~(d) SEQ ID NO:7,~~

~~and~~ having ~~at least~~ one or more substituted amino acid residues at a predetermined position selected from amino acid residues Met2, Glu3, Arg6, Asn9, Asn10, Ser13, His16, Ser17, Glu20, Gln23, Asn24, Glu27, Lys28, Glu30, Gln31, and Leu34 of SEQ ID NO: 5 ~~in the peptide sequence~~, wherein the at least one substituted amino acid residue is a hydrophilic amino acid residue selected from the group consisting of arginine, lysine, aspartic acid, glutamic acid, asparagine, glutamine, histidine, serine, threonine and glycine that increases the solubility of the peptide;[[,]] a hydrophobic amino acid residue selected from the group consisting of isoleucine, leucine, methionine, phenylalanine, tryptophan, valine and tyrosine that decreases the solubility of the peptide;[[,]] an amino acid residue having a propensity to form alpha helices selected from the group consisting of glutamic acid, leucine, methionine, glutamine, lysine, arginine, phenylalanine, isoleucine, histidine, tryptophan, aspartic acid, valine, threonine, asparagine, tyrosine, cysteine, serine, glycine and proline that increases the tendency of the peptide to form

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alpha helices;[[,]] a D-isomer of one of the naturally occurring L-amino acids;[[,]] or a non-naturally occurring amino acid residue; said peptide optionally derivatized by conjugation of a coupling group to a substituted amino acid residue, and further wherein said modified peptide has anti-HIV activity.

5. (Original) An isolated, derivatized peptide selected from the group consisting of:

(a) the FB005M peptide of SEQ ID NO:8;

(b) the FB005CM peptide of SEQ ID NO:9;

(c) the FB006M peptide of SEQ ID NO:10;

(d) the FB007M peptide of SEQ ID NO:11;

(e) the FB010M peptide of SEQ ID NO:12;

(f) the FB010KM peptide of SEQ ID NO:13;

(g) the FB066M peptide of SEQ ID NO:14; and

(h) the FB066KM peptide of SEQ ID NO:15.

6. (Currently Amended) An isolated, derivatized peptide selected from the group consisting of:

(a) SEQ ID NO:1;

(b) SEQ ID NO:2; and

(c) ~~SEQ ID NO:3; and~~

~~(d)~~ SEQ ID NO:7,

wherein predetermined amino acid residues in the peptide sequence are derivatized by conjugating a coupling group to said predetermined amino acid residues.

7. (Original) The modified peptide of claim 4, wherein predetermined amino acid residues in the peptide sequence are derivatized by conjugating a coupling group to said predetermined amino acid residues.

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8. (Previously presented) The isolated peptide of claim 4, wherein the peptide is SEQ ID NO:1 and is derivatized by attaching a coupling group to a lysine, said lysine being substituted for glutamic acid at position 23 or added at the C-terminus.

9. (Previously presented) The isolated peptide of claim 4, wherein the peptide is SEQ ID NO:2 and is derivatized by attaching a coupling group to the lysine at position 13.

10. (Previously presented) The isolated peptide of claim 4, wherein the peptide is SEQ ID NO:2 and is modified by substituting the lysine at position 13 with glutamic acid and derivatized by attaching a coupling group to an additional lysine residue added at the C-terminus.

11. (Currently amended) An isolated, derivatized peptide consisting of the sequence of SEQ ID NO: 3, wherein the sequence ~~peptide~~ is modified by replacing glutamic acid at position 13 with a lysine and attaching a coupling group to the lysine, or derivatized by conjugating a coupling group to a lysine added at the C-terminus.

12. (Previously presented) The isolated peptide of claim 4, wherein the peptide is SEQ ID NO:7 and is derivatized by attaching a coupling group to the lysine at position 13, or to an additional lysine added at the C-terminus.

13. (Previously presented) The derivatized peptide of claim 7, wherein the coupling group is selected from the group consisting of:

(a) a maleimido group;

(b) a succinimidyl group;

(c) a hydrazine group; and

(d) a carbonyl group.

14. (Original) The derivatized peptide of claim 13, wherein the maleimido group is 3'-maleimidopropionate connected to the epsilon amino group of lysine by [2-(2-amino)ethoxyl]ethoxy acetic acid.

15. (Previously presented) A pharmaceutical composition comprising the peptide of claims 1 or 4 or the derivatized peptide of claim 7.

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16. (Withdrawn) A conjugate comprising the derivatized peptide of claim 7 conjugated to a blood component.

17. (Withdrawn) The conjugate of claim 16, wherein the blood component is selected from the group consisting of:

(a) human serum albumin protein;

(b) human transferrin protein;

(c) human ferritin protein;

(d) human immunoglobulin proteins;

(e) human ferritin protein;

(f) human α-2-macroglobulin protein;

(g) human thyroxin binding protein;

(h) human steroid binding proteins; and

(i) combinations thereof.

18. (Withdrawn) A method for preventing or reducing infection of, or preventing viral replication in, mammalian cells by a virus comprising presenting a peptide according to claims 1 or 4 or a peptide derivative according to claim 7 to said mammalian cells.

19. (Canceled)

20. (Canceled)

21. (Withdrawn) The method of claim 18, wherein said peptide is presented in the presence of said virus.

22. (Withdrawn) The method of claim 18, wherein the virus is selected from the group consisting of:

(a) human immunodeficiency virus (HIV); and

(b) simian immunodeficiency virus (SIV).

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23. (Withdrawn) The method of claim 18, wherein the peptide or peptide derivative is administered orally, topically, intravascularly, intraarterially, intramuscularly, or subcutaneously.

24. (Withdrawn) The method of claim 18, wherein the peptide or peptide derivative is co-administered with one or more additional HIV treatment(s).

25. (Withdrawn) The method of claim 24, wherein the said one or more additional HIV treatment(s) comprises at least one other variant gp41 peptide.

26. (Withdrawn) The method of claim 24, wherein the additional HIV treatment(s) is selected from the group consisting of:

(a) AGENERASE;

(b) COMBIVIR;

(c) CRIXIVAN;

(d) EMTRIVA;

(e) EPIVIR;

(f) FORTOVASE;

(g) HIVID;

(h) INVIRASE;

(i) KALETRA;

(j) NORVIR;

(k) RESCRIPTOR;

(l) RETROVIR;

(m) REYATAZ;

(n) SUSTIVA;

(o) TRIZIVIR;

(p) VIDEX EC;

(q) VIDEX;

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(r) VIRACEPT;

(s) VIRAMUNE;

(t) VIREAD;

(u) ZERIT; and

(v) ZIAGEN.

27. (Withdrawn) The method of claim 18, wherein the virus is HIV and the mammalian cells are human cells.

28. (Withdrawn) A method of preventing or reducing HIV infection comprising administering a derivative variant gp41 peptide of claim 7 to a patient whose cells have been exposed to HIV, wherein said peptide derivative conjugates with a blood component of said patient, thereby extending the half-life of the peptide in said patient's blood.

29. (Currently amended) A method of making an antiviral conjugate comprising mixing derivatized variant gp41 peptide(s) according to claim 7 with blood components and allowing the formation of covalent bonds between derivatized variant gp41 peptide and blood components.

30. (Withdrawn) The method of claim 28, wherein the blood component is selected from the group consisting of:

(a) human serum albumin protein;

(b) human transferrin protein;

(c) human ferritin protein;

(d) human immunoglobulin proteins;

(e) human ferritin protein;

(f) human α-2-macroglobulin protein;

(g) human thyroxin binding protein;

(h) human steroid binding proteins; and

(i) combinations thereof.

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31. (Withdrawn) The method of claim 29, wherein the blood component is human serum albumin protein.

32. (Withdrawn) The method of claim 28, wherein the conjugation occurs *in vivo*.

33. (Withdrawn) The method of claim 28, wherein the conjugation occurs *ex vivo*.

34. (Currently amended) The method of claim 33[[2]], wherein the blood component(s) are separated by plasmaphoresis before conjugation to the derivatized peptide.

35. (Previously presented) A pharmaceutical composition comprising the isolated peptide of claims 1 or 4, or the derivatized peptide of claim 7, and a pharmaceutically acceptable carrier.

36. (Withdrawn) A method for the generation of peptides having anti-viral, virostatic or anti-fusogenic activity comprising:

(a) screening a viral virulence protein(s) to identify sequences thereof having alpha-helical forming propensities;

(b) designing an altered peptide by modifying or derivatizing at least one amino acid residue(s) of said identified sequence;

(c) synthesizing said altered peptides; and

(d) testing said peptides to verify anti-viral, virostatic or anti-fusogenic activity.

37. (New) An isolated, modified peptide comprising SEQ ID NO:12 or SEQ ID NO:13 modified by having one or more substituted amino acid residues at a predetermined position selected from amino acid residues Gln2, Glu3, Gln6, Thr9, Ala10, Lys13, Gln16, Ile17, Glu20, Glu23, Tyr24, Gln27, Asp30, Lys31, and Ser34 of SEQ ID NO: 12 or Gln2, Glu3, Gln6, Thr9, Ala10, Glu13, Gln16, Ile17, Glu20, Glu23, Tyr24, Gln27, Asp30, Lys31, and Ser34 of SEQ ID NO: 13, wherein the at least one substituted amino acid residue is a hydrophilic amino acid residue selected from the group consisting of arginine, lysine, aspartic acid, glutamic acid, asparagine, glutamine, histidine, serine, threonine and glycine that increases the solubility of the peptide; a hydrophobic amino acid residue selected from the group consisting of isoleucine, leucine, methionine, phenylalanine, tryptophan, valine and tyrosine that decreases the solubility of the peptide; an amino acid residue having a propensity to form alpha helices selected from the group consisting of glutamic acid, leucine, methionine, glutamine, lysine, arginine,

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phenylalanine, isoleucine, histidine, tryptophan, aspartic acid, valine, threonine, asparagine, tyrosine, cysteine, serine, glycine and proline that increases the tendency of the peptide to form alpha helices; a D-isomer of one of the naturally occurring L-amino acids; or a non-naturally occurring amino acid residue; said peptide derivatized by conjugation of a coupling group to a substituted amino acid residue or to an amino acid added to the C-terminus of SEQ ID NO:12 or SEQ ID NO:13, and further wherein said modified peptide has anti-HIV activity.